**Test Strategy**

# Introduction

## We are planning to perform automation testing in this project in-order to ensure quality standards. Here, we will be carrying out both functional and non-functional testing. Our aim is to ensure quality in all phases of the development lifecycle to deliver a great experience for our clients.

# References

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Relevant links and helpful information about the project:

* Project-Webpage link: <https://www.urbanladder.com/>
* Module to be tested: Very Merry sale (Module)

# Test environment

* Software Requirements:
* Chrome browser,
* Chrome driver executable file,
* ide,
* node,
* node packages of protractor.
* Microsoft Windows 7 with Service Pack 1
* Microsoft Internet Explorer 9.0 or later.
* Hardware Requirements:
* Intel Core 2 Duo 2 GHz or higher
* 2 GB of RAM.
* 1.5 GB of free disk space for installation, plus extra space for temporary files during test runs.
* 1024 × 768 or higher display resolution.
* Mouse or another pointing device.

# Details

In this module, we will be testing the webpage using multiple testing tools and frameworks. We are going to perform web-automation testing and evaluate each and every feature or functionality of this module using these below mentioned tools or frameworks.

**Tools to be used:**

* Protractor
* Selenium
* Cucumber
* TestNG
* Junit
* Jenkins(For server deployment readiness)
* Jmeter(For performance and load check)
* Appium(For mobile based testing)
* Lighthouse/Axe tools(For meeting quality standards)
* Hybrid frameworks

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# Protractor

The Protractor is an automation testing tool for web applications testing; combining powerful technologies such as Jasmine, Selenium Web driver, Node.js etc.

* The Protractor testing tool is an end-to-end behavior-driven testing framework designed keeping AngularJS applications in mind. Even though that might sound like Protractor won’t work with non-angular JS applications, it does.
* It works with both Angular and non-Angular JS applications equally well.

**Selenium**

* Selenium is one of the most widely used open source Web UI (User Interface) automation testing suite.
* Selenium supports a variety of programming languages through the use of drivers specific to each language.Languages supported by Selenium include C#, Java, Perl, PHP, Python and Ruby.
* Selenium can be used to automate functional tests and can be integrated with automation test tools such as Maven, Jenkins, & Docker to achieve continuous testing.
* It can also be integrated with tools such as **TestNG**, & **JUnit** for managing test cases and generating reports

**Cucumber**

* A cucumber is a tool based on Behavior Driven Development (BDD) framework which is used to write acceptance tests for the web application.
* It allows automation of functional validation in easily readable and understandable format (like plain English) to Business Analysts, Developers, Testers, etc.
* Feature files are the essential part of cucumber which is used to write test automation steps or acceptance tests

**TestNG**

* TestNG is a very important framework when you are actually developing the framework from scratch level.
* TestNG provides you full control over the test cases and the execution of the test cases. Due to this reason, TestNG is also known as a testing framework.
* It is an open source automated TestNG framework.
* TestNG framework eliminates the limitations of the older framework by providing more powerful and flexible test cases with help of easy annotations, grouping, sequencing and parametrizing.

# QA Deliverables

* Test plans for each feature.
* Issues reported for bugs, enhancements, usability suggestions.
* Automation testing scope.
* Webpage should take less time to load.
* All the major functionalities to be checked properly and thoroughly.
* Update timelines frequently if the tests fail.
* Industry standards need to be maintained.
* Web content accessibility guidelines should be practiced.
* Performance and Load testing to check the efficiency of the built page.
* Web Page should be compatible with any device. Ex: Laptop, Mobile Etc.
* Testing until UAT at the end of each sprint.
* Test-cases should be executed and organized properly.
* Webpage content needs to be safe and secure.

# Test Management

* Protractor framework is used for front-end web page testing.
* Selenium tool for automation web-testing.
* Jenkins is used to build test versions of the application.
* Jmeter is used for Performance and Load testing.
* Appium tool is used for mobile compatibility testing.
* Multi browser testing and Cross browser testing.
* NodeJS environment based built tools.
* Unit testing -> Integration -> User acceptance testing for each sprint in agile.
* Cucumber BDD framework for software testing(Feature, Runner, Step def).
* Right software versioning needs to be configured.
* Hybrid framework testing needs to be carried out.
* VMs are used to test the applications for testing software in various environments.
* Project management, Test management and Bug management.
* Supported operating systems.
* Test data will include user accounts.
* Proper test data should be used while testing.

# Scope of Testing

* There are unit tests, 50% coverage, written in Selenium and Protractor.
* Written during the testing phase—by testing.
* Unit tests are also written using various tools like Junit, Selenium, Cypress and Cucumber.
* Manual testing scope for features which can’t be automated.
* Automation scope needs to be defined.
* Automated UI tests for high-level workflows.

**Risk Analysis**

* Fake emails would be provided during login
* Data inaccuracy while sorting products optionally
* Genuinity about the customer services and about information

**Review and Approvals**

* All these activities are reviewed and sign off by the business team, project management, development team, etc.
* Summary of review changes should be traced at the beginning of the document along with approved date, name, and comment